

Ultrasonic De-gassing of Lactose Fermentation Tubes

Determination of coliform bacteria in water and milk often involves the use of the Most Probable Number technique to determine their presence. The presumptive test is regarded as positive when gas is formed in the inverted vial in the medium. The author has experienced difficulty in determining gas production in 2% Brilliant Green Bile medium when assaying dry milk powders, the medium becoming supersaturated with gas. An expeditious method of releasing this gas was found to be by placing the fermentation tubes in an ultrasonic bath of a low energy output and low frequency.

The tubes used for the MPN determination were 18 by 150 mm with 8- by 75-mm inverted vials for catching the gas. Nine milliliters of triple strength 2% Brilliant Green Bile medi-

um were added to those tubes which subsequently received 10 ml of the milk or water to be assayed for coliforms. The tubes receiving 1 or 0.1 ml of the assay material contained 9 ml of single strength medium. The small tubes had a capacity of 4 ml. The tubes were covered with aluminum foil and incubated for 48 hours at 32 C. The apparatus used was the Ultra Clean Model 320 LU produced by the L & R Manufacturing Company, Kearney, New Jersey.¹ The tubes were placed in the bath for five to ten seconds. Water was satisfactory as a coupling agent. Gas release was very fast and thorough and often occurred when no visible gas had been produced in the inverted vial. The apparatus produced 65 w of power distributed over a bath-area of about 322 cm² at a frequency of 75 kc per second.

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